

**Commonwealth of Pennsylvania**  
**Department of Environmental Protection (DEP)**  
**Bureau of Point and Non-Point Source Management**  
**Harrisburg, PA**

**Issued to:** Generic Listing

**Technology:** Steep Slope Elevated Sand Mound Beds (Steep Slope ESM Beds)

**Classification Type:** Alternate technology (A2014-0023-0002)

**Classification Date:** February 6, 2004 (ASG)  
February 24, 2014

In accordance with Title 25, Chapter 73, Section 73.72, DEP classifies the Steep Slope Elevated Sand Mound Beds (Steep Slope ESM Beds) for use as an alternate onlot sewage treatment system. This classification permits the use of the Steep Slope ESM Beds as a treatment system capable of receiving sewage effluent at either the primary treatment level (exceeding 25 mg/l CBOD<sub>5</sub> and exceeding 30 mg/l TSS) or the secondary treatment level (not exceeding 25 mg/l CBOD<sub>5</sub> and not exceeding 30 mg/l TSS).

**I. Technology Description**

The Steep Slope ESM Bed is an elevated sand mound system which can be sited on (1) slopes ranging from 12% and 15% and (2) percolation rates ranging from 3 min/in to 30 min/in.

**II. Design Requirements**

A. Location: The Steep Slope ESM Beds may be installed for the treatment of domestic strength wastewater (as defined by Table 1 of Miscellaneous Data to be used in Conjunction with PA DEP listings) serving a new construction or as a repair.

B. Siting:

- (1) Evaluation of the soil profile must show that there is greater than or equal to 20 inches of suitable soil as described in Chapter 73, Section 73.14.
- (2) Slopes must range from 12% and 15% at the site of the proposed installation.
- (3) Percolation rates must range from 3-30 minutes per inch.
- (4) The percolation tests must be conducted in accordance with Chapter 73, Section 73.15(3)(ii) or (iii). The absorption area must be sized in accordance with the requirements of Chapter 73, Section 73.16(c), Table A, "Subsurface Sand Filters and Elevated Sand Mounds." No size reductions are permitted for use of aerobic tanks or other system components.
- (5) The installation of the system must not violate the 48-inch vertical separation requirement.

C. Construction:

- (1) Tank installations must consist of either a two-compartment rectangular tank, two rectangular tanks in series, and otherwise conform to meet the requirements of Section 73.31. Vertically aligned circular (round) tanks are not permitted. Aerobic treatment tanks must be in compliance with Section 73.32.

- (2) Sand shall meet the requirements of Chapter 73, Section 73.55(c). The downslope sand shall be extended to a 2:1 ratio.
  - (3) The length to width must be 6:1 or greater. The overall bed width must not exceed 10 feet.
  - (4) The downslope berm shall be extended to a 4:1 ratio to improve stability.
  - (5) A pressure distribution system is required on all designs.
  - (6) Lateral end cleanouts are required.
  - (7) The surface shall be chisel plowed across the slope (including the area under the berm) as described in Chapter 73, Section 73.55(b)(2).
- D. Installation: An onsite preconstruction conference attended by the sewage enforcement officer, designer, installer, and the property owner prior to construction is recommended.

### III. Minimum Maintenance Standards

- A. Inspection of the area around the soil absorption area every 6 months by the homeowner to ensure that there is no ponding of effluent or downgradient seepage.
- B. The manufacturer's representative must meet with the property owner within one (1) month of system start-up and/or occupancy of the dwelling and with the local agency's SEO upon request, to explain the operation and maintenance of the system, provide written instructions to the property owner, and to identify the locations of all parts of the system.
- C. The service provider shall inspect at least the following items at an interval frequency recommended by the manufacturer's requirements:
  - (1) Inspect septic tanks, dosing tanks, and lift pump tanks for structural integrity of the tank, inlet and outlet baffles, solids retainer, pumps, siphons, and electrical connections;
  - (2) Inspect aerobic tanks for structural integrity of the tank, inlets, and outlet baffles, buoyed solids retainer, pumps, siphons, and electrical connections.
  - (3) Ensure that the pumping system is operational.
  - (4) The effluent filter shall be inspected and maintained per the manufacturer's requirements.
- D. The service provider shall inspect and pump excess solids in accordance with the manufacturer's requirements.

### IV. Permitting Requirements

- A. A sewage enforcement officer may independently review the design and issue the permit for components under this listing. All other proposals under this listing must be submitted to the Department for review and comment.
- B. The sewage enforcement officer shall include on both the *Application for An Onlot Sewage Disposal* permit (Part III, Section 1) and the permit, the classification number itemized in the Classification Type of this listing.

### V. Planning Requirements

Not applicable